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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,471	06/27/2001	Masakazu Ogasawara	041514-5130	1389
9629	7590	01/14/2005	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			PSITOS, ARISTOTELIS M	
			ART UNIT	PAPER NUMBER
			2653	
DATE MAILED: 01/14/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,471

Applicant(s)

OGASAWARA ET AL.

Examiner

Aristotelis M Psitos

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/28/04 & 11/29/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1,6 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/9 & 10/26/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicants' responses of 6/28/04 & 11/29/04 have been considered with the following results.

Information Disclosure Statement

The Ids filed on 7/9/04 & 10/26/04 have been reviewed and made of record.

Claim Objections

Claim 1 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 6. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Applicants' claim 6 further defines the value of L with respect to two other factors, s (spot size) and x. This further elaboration of L is not considered to patentable define over the limitations of claim 1 and hence the examiner considers such as being substantially duplicative. Nevertheless, the limitation of claim 7 is not found in claim 6 and hence if this were included into claim 1, the objection would no longer be maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2653

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al further considered with Ichimura et al and both further considered with EP 0814465.

The references to Yamakawa et al and Ichimura et al are relied upon for the reasons of record. The newly cited EP document, provided by applicants, relate to equations known to those of ordinary skill in the art relating ct (cross talk) with various parameters – see page 4, starting at line 2 to page 8 line 46. With respect to claim 7, the examiner concludes that such a desired result (3%) or lower distortion is yielded from the above noted dimensions for the normalized detector.

It would have been obvious to modify the base system of Yamakawa et al and Ichimura et al with the above parameters disclosed in the EP document and derive the recited formula.

Response to Arguments

Applicant's arguments with respect to claims 1 and 7 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argues:

a) the Yamakawa et al and Ichimura et al fail to disclose that the size of the detector is in micrometer square dimensions.

The examiner is not persuaded. The passages noted by applicants and reviewed by the examiner lead the examiner to conclude the sizes mentioned, (see for instance at column 18, lines 4-21: 16, 10, 4 and 2 μm is the measurement along one axis, either the x or y axis, and that in order to yield applicants' claimed squared parameters (μm)², one would multiple two dimensions. That is the examiner interprets the detectors as squares having both their x and y axis the same value – such as 16, 10, 4 or 2 or 6, or 8

Art Unit: 2653

μm would yield values appropriately – 256, 100, 16, 4, 36,64 (μm)². Since these values overlap the claimed values and in keeping with *In re Peterson* (cited in previous OA), this argument is not persuasive.

b) the references fail to disclose the various parameters recited in the claim.

The newly cited EP document EP 0814465 (cited by applicants and greatly appreciated by the examiner), recite numerous equations and parameters known in this environment relating cross talk. It is noted that applicants' disclosure at page 12 also defines formulas for and their relationship with cross talk. The examiner concludes that applicants' reliance upon the formula does not overcome the above combined references, i.e., one of ordinary skill in the art would be able to express ct in a variety of parameters, predicated upon desired expression.

Claim Rejections - 35 USC § 103

2. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holtslag et al further considered with either newly cited article by Narahara et al or Ichimura et al and all further considered with the EP 0814465.

The following analysis is made:

Claim 1

Holtslag et al

A pickup device of an apparatus for recording or reproducing information, by irradiation of a light beam, to and from a multi-layered recording medium having a plurality of recording layers laminated through spacer layers, the device comprising:

see the abstract, and

summary of the invention

an illumination optical system including an objective lens for focusing a light beam onto any of said recording layers of said multi-layered recording medium; and

in fig. 6-10, element 114 is the objective lens, the medium is multi-layered

Art Unit: 2653

a detecting optical system including a photodetector for receiving and photo electrically converting reflection light from said recording layers of said multi-layered recording medium through said objective lens;

in the above figures, the detector(s) is better shown in figure 7.

wherein said photodetector has a normalized detector size:

(B/β) of a size of 10 μm to 50 μm , and

see col. 7 starting at

col. 45 to col. 8 line 23,

col. 21 line 33 to col. 24 line 26.

wherein the normalized detector size (B/β) is given

by an equation of:

$$(B/\beta)^2 = L / (f_o / f_{ob})$$

wherein L denotes a size of one side of the photodetector,

f_o denotes a focal distance of the detecting optical system and

f_{ob} denotes a focal distance of the objective lens,

wherein said objective lens has a numerical aperture

NA value not found.

of 0.85 or greater.

In the above Holtslag et al system, the cross talk correction ability is discussed with respect to spot size diameter and detector values as well as relationship as described in the formula found at col. 10, lines 1-4.

The examiner further notes that the diagonal of the detector is preferred to be 60 μm . Using mathematical relationships (hypotenuse, right triangle, etc) and that the photodetector is a square, the range of normalized detector as claimed is within such a disclosure as is the squared parameter $(\mu\text{m})^2$.

There is no disclosure with respect to the NA value. The NA value recited in Holtslag et al is as given.

Art Unit: 2653

Either the newly cited article by Narahara et al or the previously cited patent to Ichimura et al teach such a NA value in this environment for the desired increased disc capacity.

It would have been obvious to modify the base system of Holtslag et al with the above teaching from either of these secondary references, motivation is as taught to increase the disc capacity.

With respect to the parameters discussed in the formula, again the EP document is relied upon for the reasons stated above.

It would have been obvious to modify the base system of Holtslag et al/Narahara or Ichimura et al with the above mathematical parameters/relationships discussed in the EP document and derive the formula parameters recited. The examiner concludes that such is an exercise in mathematics, and obvious to one of ordinary skill in the art.

The indicated allowability of claim 6 is withdrawn in view of the newly discovered reference(s) to Koyama et al and Holtslag et al. Rejections based on the newly cited reference(s) follow.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama et al considered with EP 0814465 further considered with either newly cited article by Narahara et al.

Claim 6 is substantially duplicative of claim 1, with the following recited language contained therein: wherein said size L of the photodetector is given by an equation, $x = S/L$ where x is substantially equal to 0.5 and S denotes : light spot size formed on said photodetector.

The following analysis is given:

Koyama et al discloses an optical detection system – see abstract having the appropriate an illumination optical system, and a detecting optical system – see the discussion 5. The document further discusses the ability/impact of cross talk and devices various relationships in order to compensate such predicted upon a ratio of the apertures – see the additional discussion commencing at col. 17 line 50 till col. 21 line 12.

Koyama et al lacks the particularly claimed NA value, the multi-media ability and the nomenclature recited in the formula. Nevertheless spot size is discussed as it is with relationship to the

Art Unit: 2653

aperture and the dimension along ONE axis (radial direction for instance at col. 20, line 53 to col. 21, line 12.

EP 0814465 further discusses the impact of having a multi-layered disc and crosstalk (see the Above discussion).

The Narahara et al article teaches the particularly claimed NA value and reasons why such is desired (increase disc capacity).

It would have been obvious to modify the base system of Koyama et al with the above additional teachings from the EP document in order to compensate for crosstalk as created by a multi-layered disc, and the Narahara et al article, reason is to increase the recording density/capacity of the disc in Koyama et al as well as to ensure reducing the crosstalk effect.

ERRATA

The examiner regrets any inconvenience to applicants or their representative due to the delay in responding to applicants' amendment of 6/28/04. The present application was not released for the examiner's review until recently and it is noted that the amendment of 11/29/04 is a duplicate of the previously filed and received amendment of 6/28/04.

With respect to applicants' confusion with respect to which document(s) the examiner relied upon in the previous OA, the examiner cannot ascertain why applicants' are confused since the examiner has Followed established protocol. Further elaboration is respectfully request so the examiner can fully respond.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M Psitos whose telephone number is (703) 308-1598. The examiner can normally be reached on M-Thursday 8 - 4.

Art Unit: 2653

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aristotelis M Psitos
Primary Examiner
Art Unit 2653



AMP
January 12, 2005